

## **REMARKS**

Claims 1, 3-11, 13-18, 20-22, and 35-46, 48-58, and 60-70 were previously presented. Claims 2, 12, 19, 23-34, 47, and 59 are cancelled. Accordingly, claims 1, 3-11, 13-18, 20-22, and 35-46, 48-58, and 60-70 are pending in the application.

### **2. Rejection of Independent Claims 1, 18, 37, 53, 60 and 62 under 35USC§102**

Independent Claims 1 and 60 each stand rejected under 35USC§102 or 35USC§103 as being unpatentable over U.S. Patent Number 5,586,209 (Matsuura).

Claims 1 and 60 each recites “**multi-mode waveguides**” and “the waveguides intersecting one another.” As a result, Matsuura must teach or suggest **multi-mode waveguides** that intersect one another.

The Office Action specifically cites Figures 1-4 and 6 of Matsuura as providing the required teaching. However, Matsuura teaches that waveguides 220 and 221 are single mode waveguides (C10, L35-40). As a result, the Applicant has carefully reviewed Matsuura and is unable to find where Matsuura teaches or suggests **multi-mode waveguides that intersect one another** and are constructed as claimed. As noted in Applicant’s specification, the use of multi-mode waveguides can reduce optical loss and simplify the fabrication process. Accordingly, the Applicant respectfully requests the location where this teaching or suggestion can be found in Matsuura. In the absence of this teaching or suggestion, the independent claims are patentable over the cited art.

### **6. Claims 3-11, 13-17, 20-22, and 35-36, 38-46, 48-52, 54-58, 61, and 63-70**

Each of claims 3-11, 13-17, 20-22, and 35-36, 38-46, 48-52, 54-58, 61, and 63-70 depends from Independent Claim 1, 18, 37, 52, 60, or 62. Since the Independent Claims are believed to be in condition for allowance, claim 3-11, 13-17, 20-22, and 35-36, 38-46, 48-52, 54-58, 61, and 63-70 are also believed to be in condition for allowance.

## CONCLUSION

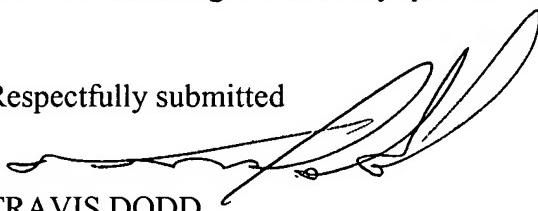
In light of the Claim amendments presented above, Applicants believe they are entitled to a letters patent. The Examiner is encouraged to telephone the undersigned with any questions.

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Respectfully submitted

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